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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,167

12/02/2003

Yasuhiko Aoki

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EXAMINER

KIM, DAVID S

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/726,167

Applicant(s)

AOKI ET AL.

Examiner

David S. Kim

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 7-8, 15, 19-20, and 27** are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Kuroyanagi et al. (U.S. Patent No. 6,496,289 B1, hereinafter "Kuroyanagi").

**Regarding claim 1**, Kuroyanagi discloses:

An optical cross-connect (Fig. 15A) comprising:

a plurality of input ports (1 through k on left side) each operable to receive an optical input signal, each input signal comprising a plurality of channels that are each operable to carry optical traffic;

a plurality of output ports (1 through k on right side) each operable to output an optical output signal;

a distributing amplifier (optical amplifier at each input port with corresponding coupler 1200) associated with each input port, each distributing amplifier operable to generate a plurality of copies of the input signal received at the associated input port;

a plurality of filter units (1201) each operable to:

receive a copy of one or more of the input signals from one or more of the distributing amplifiers (reception of signals from 1200); and

forward traffic in selected channels of one or more of the copies (filters 1201 forward selected channels to 1202); and

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a combining amplifier (optical amplifier at each output port with corresponding coupler 1202) associated with each output port, each combining amplifier operable to:

receive the traffic in one or more of the channels forwarded by one or more of the filter units (reception of signals from 1201); and

combine the received traffic into an output signal to be output from the associated output port (couplers 1202 combine received traffic).

**Regarding claim 7,** Kuroyanagi discloses:

The optical cross-connect of Claim 1, wherein a filter unit is associated with each output port (a filter 1201 is associated with each output port).

**Regarding claim 8,** Kuroyanagi discloses:

The optical cross-connect of Claim 7, wherein a copy of each input signal is forwarded to each filter unit so that any channel of any input signal may be output from any output port (col. 14, l. 45-48 and coupler 1200 implies that each filter 1201 receives a copy of each input signal).

**Regarding claims 15 and 19-20,** claims 15, 19, and 20 are method claims that introduce limitations that correspond to the limitations introduced by apparatus claims 1, 7, and 8, respectively. Therefore, the recited means in apparatus claims 1 and 7-8 read on the corresponding steps in method claims 15 and 19-20.

**Regarding claim 27,** Kuroyanagi discloses:

An optical cross-connect, comprising:

means for receiving a plurality of optical input signals, each input signal comprising a plurality of channels that are each operable to carry optical traffic (1 through k on left side);

means for generating a plurality of copies of each input signal (optical amplifier at each input port with corresponding coupler 1200);

means for forwarding traffic in selected channels of one or more of the copies to one or more output ports (1201); and

means for combining the traffic received at each output port into an optical output signal to be output from the output port (optical amplifier at each output port with corresponding coupler 1202).

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 2-6, 9-14, 16-18, and 21-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroyanagi.

**Regarding claim 2**, Kuroyanagi does not expressly disclose:

The optical cross-connect of Claim 1, wherein the distributing amplifiers each comprise **a plurality of passive optical couplers** operable to generate the plurality of copies of the associated input signal.

However, it is an obvious variation for the distributive couplers 1200 of Kuroyanagi to comprise a plurality of passive optical couplers.

**Regarding claim 3**, Kuroyanagi does not expressly disclose:

The optical cross-connect of Claim 1, wherein the combining amplifiers each comprise a plurality of passive optical couplers operable to combine the received traffic into the associated output signal.

However, it is an obvious variation for the combining couplers 1202 of Kuroyanagi to comprise a plurality of passive optical couplers.

**Regarding claim 4**, Kuroyanagi discloses:

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The optical cross-connect of Claim 1, wherein the filter units are each operable to forward traffic in one or more selected channels by passing the traffic in selected channels (col. 14, l. 35-40, 49-54)

Kuroyanagi does not expressly disclose:

terminating the traffic in the remaining channels.

However, it is conventional practice for filters to terminate undesired channels and their associated traffic.

**Regarding claim 5**, Kuroyanagi discloses:

The optical cross-connect of Claim 1, wherein each filter unit comprises one or more filters (each 1201 comprises multiple filtering units), each filter operable to receive a copy of an input signal and to pass the traffic in selected channels (col. 14, l. 35-40, 49-54).

Kuroyanagi does not expressly disclose:

terminating the traffic in the remaining channels of the particular input signal.

However, it is conventional practice for filters to terminate undesired channels and their associated traffic.

**Regarding claim 6**, Kuroyanagi discloses:

The optical cross-connect of Claim 5, wherein the filters comprise tunable filters (col. 14, l. 39-40, acousto-optic filter is a tunable filter).

**Regarding claim 9**, Kuroyanagi does not expressly disclose:

The optical cross-connect of Claim 1, wherein the filter units are configured so that each combining amplifier receives only non-interfering channels from the filter units.

However, it is obvious to arrange each combining amplifier to receive only non-interfering channels from the filter units of Kuroyanagi. One of ordinary skill in the art would have been motivated to do this to avoid undesired interference between channels, which could lead to unintelligible optical signals and loss of transmitted information.

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**Regarding claim 10**, claim 10 is an apparatus claim that corresponds to a coherent combination of the limitations in apparatus claims 1-3 and 5. Since all these claims are rejected under Kuroyanagi, all the limitations of apparatus claim 10 are addressed in view of Kuroyanagi. Accordingly, the recited means in the coherent combination of the limitations in claims 1-3 and 5 read on the corresponding means in apparatus claim 10.

**Regarding claims 11-14**, claims 11, 12, 13, and 14 are apparatus claims that introduce limitations that correspond to the limitations introduced by apparatus claims 6, 7, 8, and 9, respectively. Therefore, the recited means in apparatus claims 11-14 read on the corresponding means in apparatus claims 6-9.

**Regarding claims 16-18 and 21**, claims 16, 17, 18, and 21 are method claims that introduce limitations that correspond to the limitations introduced by apparatus claims 2, 3, 5, and 9, respectively. Therefore, the recited means in apparatus claims 2-3, 5, and 9 read on the corresponding steps in method claims 16-18 and 21.

**Regarding claims 22-26**, claims 22, 23, 24, 25, and 26 are method claims that introduce limitations that correspond to the limitations introduced by apparatus claims 10, 10, 12, 13, and 14, respectively. Therefore, the recited means in apparatus claims 10 and 12-14 read on the corresponding steps in method claims 22-26.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK



**KENNETH VANDERPUYE**  
**SUPERVISORY PATENT EXAMINER**